

REMARKS

The applicant respectfully requests reconsideration in view of the following remarks. Support for newly added claim 25 can be found in the original claim 1. A fee of \$22.00 is enclosed for the extra total claim over twenty that is being added.

Claims 1-9 and 14 are rejected under 35 U.S.C. 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 2, 8 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Peng et al. in *Acta Polymerica*, Vol. 49, pp. 244-247, 1998 (Peng et al.). Claims 1-4, 8, 9 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by WO 02/095841 (Frey et al.). Claims 1-9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frey et al. and further in view of US 6,479,172 (Hu et al.). The applicant respectfully traverses these rejections.

35 U.S.C. 112, Second Paragraph Rejection

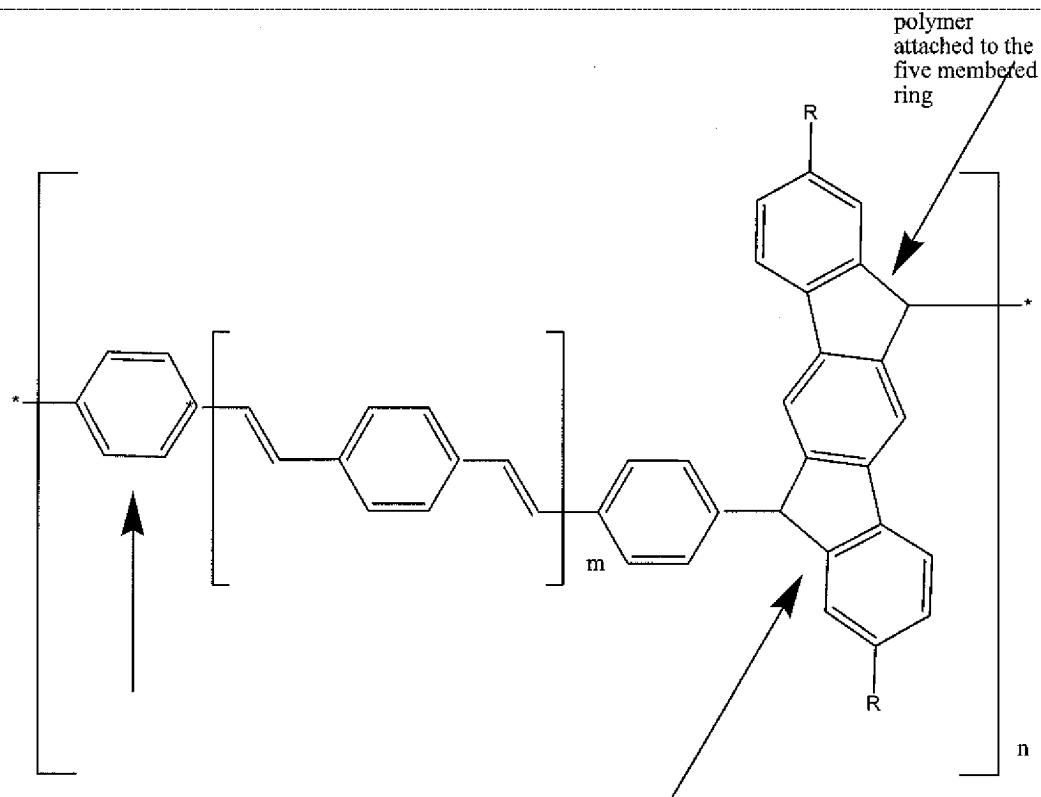
Claims 1-9 and 14 are rejected under 35 U.S.C. 112, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "optionally substituted" used in pending claim 1 does not pertain to R₁-R₄ and means that the unit of formula (I) may be substituted at positions in addition to R₁-R₄. This is clear from the specification of the present application, where it is stated that "the aromatic groups in the main chain of the polymer may themselves be substituted, for example they may be fluorinated. ..." (page 12, lines 11-15 of the applicant's specification). For the above, reasons this rejection should be withdrawn.

It is noted that newly added claim 25 does not include this expression.

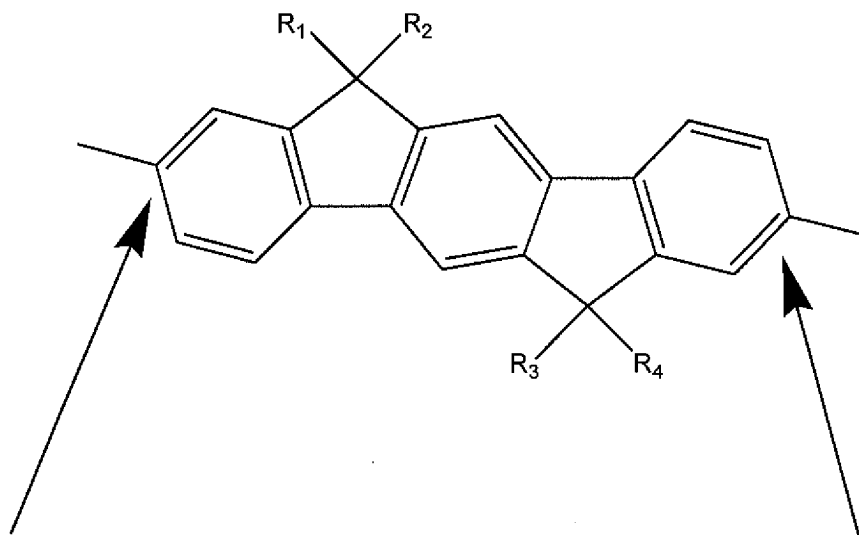
Claims 1, 2, 8 and 14 Are Rejected under 35 U.S.C. 102(b)

Claims 1, 2, 8 and 14 have been rejected under 35 U.S.C. 102(b) as being anticipated by Peng. The indenofluorene unit according to Peng is incorporated into the main chain of the polymer via the two rings containing 5 carbon atoms, which are not aromatic, whereas the indenofluorene unit according to the present invention is incorporated into the main chain of the polymer via the two terminal aromatic rings (which contain 6 carbon atoms).

Again, Peng discloses that the polymer is attached to the 5 membered ring as indicated with the arrow below.



However, as stated above the applicant's claimed invention discloses that the main chain is attached to the six-membered aromatic ring and not the five-membered non-aromatic ring.



For the above reasons, this rejection should be withdrawn.

Rejections Over Frey

Claims 1-4, 8, 9 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Frey. Claims 1-9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frey and further in view of Hu.

Frey has a publication date of November 28, 2002. The applicant's priority date is November 8, 2002. The applicant's priority application was filed in English. The applicant believes that they are entitled to effective filing date of November 8, 2002. Enclosed is a copy of the applicant's priority document. The claims are very similar to the claims of the priority document. It appears that the only difference between the claim 1s, is that in the present case claim 1 also includes the feature, "and R₁ and R₂ and / or R₃ and R₄ may be linked to form a monocyclic or polycyclic, aliphatic or aromatic ring system". However, the Examiner has not

relied upon Frey for the teaching of and R_1 and R_2 and / or R_3 and R_4 may be linked to form a monocyclic or polycyclic, aliphatic or aromatic ring system. Therefore, the applicant does not believe that Frey is prior art.

It is correct, as stated by the Examiner, that Frey's conjugated unit of formula (IX) encompasses the repeat unit of the present formula (I), but Frey does not explicitly disclose an example which meets the following:

- an indenofluorene unit (i.e. Z^2 and Z^3 are $C(R^4)(R^5)$),
- an indenofluorene unit, which is incorporated into the polymer chain via the 4,4'-position (as claimed in pending claim 1 of the present application), and
- an indenofluorene unit having the specific substitution scheme, as claimed in pending claim 1 of the present application, according to which "at least one of R_1 - R_4 comprises an aryl or heteroaryl group".

Frey discloses that Z^2 and Z^3 can be the same or different and is selected from the group consisting of O, S, SO, SO₂, NR₃, N⁺(R^{3'})(R^{3''}), C(R⁴)(R⁵), Si(R^{4'})(R^{5'}) and P(O)(OR⁶). Not only does Z^2 have to be a C(R⁴)(R⁵) but so does Z^3 . In addition, Frey does not require that the indenofluorene unit, which is incorporated into the polymer chain via the 4,4'-position. Frey can incorporate the indenofluorene unit in the 2, 3, 4 or 5 position on either side of the unit. Lastly, Frey does not require at least one of R_1 - R_4 comprises an aryl or heteroaryl group.

The applicant's invention is to a very specific indenofluorene unit and could be considered a "selection invention" The Examiner correctly states in paragraph no. 8 of the office action, "Frey et al. do not, however, provide a specific example of a polymer within the

scope of the present claims". For the reasons stated above, Frey requires too much manipulation for an anticipation rejection.

The advantages of the polymers of the present application are clearly demonstrated in the 1.132 Declaration, which has been executed on July 16, 2008. These results are not obvious for a person of ordinary skill in the art. For the above reasons, this rejection should be withdrawn.

Nevertheless, even if Frey can be used as prior art, the applicant does not believe that the the pending set of claims should be unpatentable over Frey in view of Hu because Hu only discloses so called "small molecules" and no polymers and furthermore do not disclose units of formula (I) of the present application ("wherein at least one of R₁-R₄ comprises an aryl or heteroaryl group") (see compounds (II-1) –(II-24)). Therefore, the combination of Frey with Hu does not lead to the applicant's invention.

A statement that modifications of the prior art to meet the claimed invention would have been "obvious to one of ordinary skill in the art at the time the invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See MPEP § 2143.01 IV. "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007) quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Furthermore, the Examiner cannot selectively pick and choose from the disclosed parameters without proper motivation as to a particular selection. The mere fact that a reference may be modified to reflect features of the claimed invention does not make the modification, and

hence the claimed invention, obvious unless the prior art suggested the desirability of such modification. *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430 (Fed. Cir. 1990); *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992). Thus, it is impermissible to simply engage in a hindsight reconstruction of the claimed invention where the reference itself provides no teaching as to why the applicant's combination would have been obvious. *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). For the above reasons, these rejections should be withdrawn.

In view of the above, applicant believes the pending application is in condition for allowance.

Applicant believes no additional fee other than for the extra claim is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 14113-00039-US from which the undersigned is authorized to draw.

Dated: November 17, 2009

Respectfully submitted,
Electronic signature: /Ashley I. Pezzner/
Ashley I. Pezzner
Registration No.: 35,646
CONNOLLY BOVE LODGE & HUTZ LLP
1007 North Orange Street
P. O. Box 2207
Wilmington, Delaware 19899-2207
(302) 658-9141
(302) 658-5614 (Fax)
Attorney for Applicant

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